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COVER: The docile cottontail rabbit: an acrylic by Game Commission artist, C. C. Knuth.

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EDITORIAL

Wildlife Week

THIS year's National Wildlife Week theme is one that all who enjoy the outdoors can support. If all Americans would truly subscribe to the theme "We care about wildlife habitat," this country's future could be vastly different than if we follow our present course. Habitat loss is the greatest threat to all wildlife and as long as we make expedient solutions to human problems top priority, it will continue to be.

According to the U. S. Environmental Protection Agency, four billion tons of sediment are washed into streams annually because of land misuse. Surface mining has destroyed 1,687,288 acres of wildlife habitat and impaired twice that much. In only 7 states, 17,791,531 acres of wetlands have been destroyed, representing as much as 45% in some cases. We consume 4 billion tons of raw material annually, most of which ends up in sanitary land fills, incinerators or our streams and oceans.

Furthermore, our intensive and consumptive use of land is expected to escalate dramatically. It is estimated by some that we will need to duplicate every man-made facility that now exists in order to keep up with demand by the year 2000. Some conservative projections anticipate 19.7 million acres lost to urban sprawl, 3.5 million acres paved over for highways and airports, 5 million acres used for public facilities, second homes and waste disposal, plus 492 new power stations requiring up to 1 billion acres of cooling water and 2 million acres for transmission line right-of-ways.

The only obvious plus for wildlife is the estimate of 7 million acres to be diverted from basically agricultural use to parks, recreation and wildlife areas. Anyway you add up these figures, wildlife is in for a rough time ahead. It would behoove all of us who appreciate wildlife to reaffirm that we care about wildlife habitat. Wildlife will need all the help we can give it. As an individual, there are many things you can do on behalf of conservation. Everything you do to help improve or protect wildlife habitat helps the general environment; and improving environmental quality helps wildlife.

Make your views known on crucial issues affecting the quality of life on this earth. Work to implement good ideas.

Insist that public hearings be held on decisions affecting the quality of your immediate surroundings and make sure you have the opportunity to participate in community, state, and national planning.

Support biological controls of pests and increased research into natural controls.

Support programs to set aside areas suitable for wildernesses and wildlife refuges, parks and monuments, seashores, lakeshores, recreation areas, wild rivers, and scenic trails.

Make sure all alternatives are considered when natural areas are invaded during the construction of highways, airports, and other facilities.

Learn how local schools are teaching the principles of resource conservation. If there are no provisions for environmental studies, see if you can encourage the development of such a program.—H. L. G.

LETTERS

Guides Praised

I was quite distressed by Bill Martin's article on Eastern Shore rail hunting (September '74 *Virginia Wildlife*). He was pretentious in explaining that the guides of Wachapreague are "ignorant of literature and grammar" and "soon to die." He failed to mention the younger men of Wachapreague (not all with "blue eyes") who are desperately trying to learn the ways of the more experienced guides and have no intention of dying soon.

William E. Byrd, Jr.
Wachapreague

The story was designed as an "atmosphere" piece on the marsh and the men who go there as guides, with the intent of publicizing their many virtues. The phrase "ignorant of literature and grammar . . ." was to show that at least one particular guide knew things that people with knowledge in other fields would never know nor adequately understand.

Please accept my regret for whatever displeasure the story caused. I regard Wachapreague and its people as a magic place, but I fear that it is a fragile place which industry and man could well destroy; thus, the "soon to die" phrase.—Bill Martin

Deer Drama

I witnessed an event that would not be believed unless seen. A buck ran through the local grocery store where I was shopping. The animal was struck by a car in the parking lot of the store, fled through the automatic doors, crashed through the flower section, slammed into the meat counter, where it was finally caught after it slipped on the hard tile floor. The deer was bleeding liberally from the mouth, and breathing very hard while it was being escorted out the back of the store.

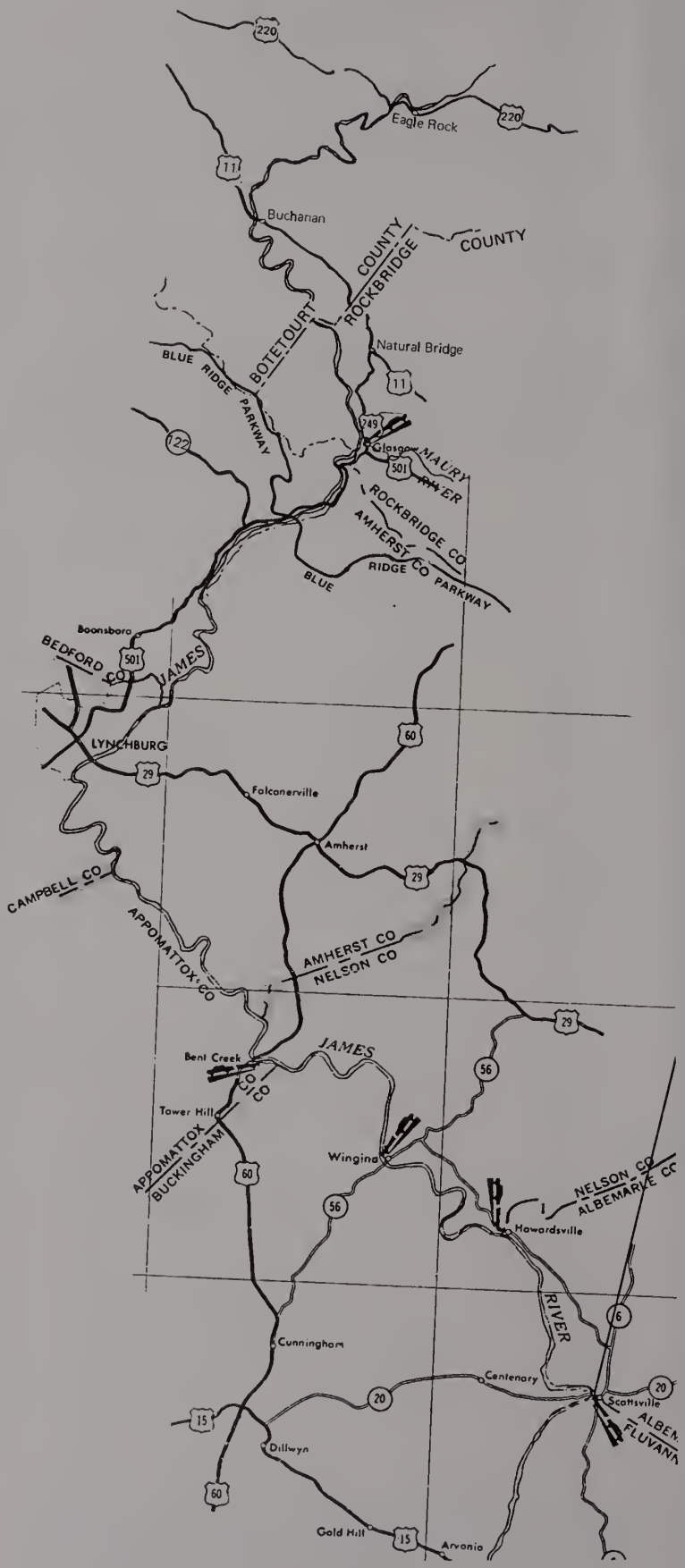
Remarks from the crowd that gathered were unbelievably sadistic. Wisecracks such as "We'll have fresh meat on the counter tomorrow," and "Just slit his throat and get it over with" could be heard. The animal was suffering and dying in front of these people and they didn't seem to care.

All you "Be kind to deer fans," think twice before you degrade another deer hunter. I'm not saying that deer do not suffer from gunshots at times. When they are just winged, it is not done purposely; and when a deer hunter walks up on a deer that is suffering he does not make fun of it while it is dying.

D. Scott
A proud hunter & outdoorsman

Thank you for your interesting letter. I sometimes believe that a lot of this so-called compassion for animals is a conditioned response evoked only by a proper Disney type script. Had your deer episode been the ending to a one-hour true life adventure, it probably would have brought about the proper tears, but without this conditioning the onlookers were their normal, seemingly callous selves. It's too bad that the movie makers are able to exploit this phenomenon so successfully at the hunter's expense.—Ed.

James River Journey



By STEVE RHODES
Schuyler

WITH the aid of his paddle solid against a sycamore trunk, Jeff Littlefield gave the 15 feet long canoe a healthy shove and we were off on a six day canoe trip I'll never forget. Jeff and I had just graduated from V.P.I. the previous week and had planned the trip as a sort of "breather" before going to work. Jeff makes his home near Richmond, and his attractive wife, Kay, had driven us and our equipment to the starting point below Clifton Forge. Kay was to pick us up (hopefully) at Scottsville whenever we got there. As it turned out, we enjoyed excellent weather and were able to complete the 165-mile ordeal by the following Saturday at 2 p.m.

We launched Jeff's canoe below the route 220 bridge on Sunday evening June 9th. At that point the James was so narrow that I could have thrown my paddle to either shore from the middle of the river. At Scottsville the river is comparatively slow moving and several hundred yards wide.

Included in our gear were two paddles, a waterjug, cooler, change of clothes, backpack containing two blankets and eating utensils, two flashlights, two plastic tarps, life jackets, bowfishing rig and spinning tackle.

We had never done any whitewater canoeing. On the very first rapids we were swept sideways and almost swamped on a 8-10 inch dropoff! Shortly afterward, on a peaceful stretch, we spotted a huge snapping turtle on the left bank. Paddling over to investigate, I delivered several light taps with my paddle on its 15-inch shell. The snapper could not tolerate the thumping and rapidly plunged into the river throwing drops of water on the canoe and me. Neither Jeff nor I had realized how fast a big turtle can move!

We camped at dusk on a small sandbar after covering about five miles. A big supper of stew and sandwiches relaxed us, and we let the fire die low and stretched out in our blankets. Stars glittering in the heavens promised a bright day ahead.

We shoved off early after a breakfast of eggs and bacon and soon came upon four deer fording the river. When the whitetails saw us, they plunged ahead throwing spray well above their heads. They disappeared into the forest without a backward glance. Mountains were close by on each side of us and often towering cliffs rose up from the river's edge. Large hemlocks and white pines covered the bluffs and were scattered in patches across the mountain ridges. Because the river was narrow and fast, we were able to cover over forty miles that first full day before

camping on the edge of the Blue Ridge below Buchanan. Only the rapids immediately below Buchanan were any problem at all and that set banged us upon an unseen rock; I lunged headfirst into the swirling current. Luckily, the canoe didn't swamp.

So far we had made only one stop for food. We survived primarily on canned food and cokes and had to be sure to find a store open before 5 p.m. because most stores on the river close by then. Buchanan was the last place we found ice for the cooler.

Below where the Maury river flows into the James we crossed our first power dam. The portage took about one hour and then we faced formidable-looking rapids just below the dam. The James, now falling through the Blue Ridge south of Buena Vista, was roaring; rocks five feet high jutted up to greet us. High and vast mountains fell abruptly to the river's edges. We tied most of the gear down and shoved off.

We ran the first few drops fine; then we met our "waterloo" on probably the worst rapids on the James. Backpaddling to size up the big drop ahead, we finally chose a likely looking spot and plunged forward. Immediately I realized we were in danger, but it was too late. The whitecaps took us and the canoe under. The next thing I knew we were being swept through swift water over our heads, both of us holding onto the sides of the canoe and trying to touch bottom with our toes. One hundred yards later Jeff managed to crawl up on a rock and haul back on the canoe's rope, thereby swinging it toward shore.

Above the river's roaring I heard Jeff yell, "Steve, get on the upper side of the canoe!" I clawed around just in time before the canoe lodged against a sizable boulder. I might have been penned had it not been for Jeff's warning.

What seemed like two wet hours later, the sun was on the mountain top to the west and we had completed unswamping and repacking. Among lost items were one shirt, one cushion, one-half dozen eggs, a knife, several cokes, ice, a shovel and a waterjug plus a 10 dollar pair of tennis shoes. We shot the next half-mile or so of rapids with only minor dents and hangups.

That night we camped below a second dam and built a large fire, attempting to dry ourselves and our blankets but to no avail. A fitful sleep ensued and we had to keep the fire going all night just to stay warm. Canned pineapples completed our breakfast menu and we started out early in search of a store. As the river gradually wound its way out of the mountains, the country changed dramatically. Flat bottomland replaced steep bluffs and the Blue Ridge grew smaller with each passing mile. The giant evergreens gave way to red maple, box elder, sycamore and various hardwoods. Not far from the Blue Ridge Parkway bridge, I spied several large carp in shallow water. Jeff silently eased the canoe close up; I released an arrow from my 50 pound bow that struck the 7 pound fish through the gills. The brief battle made us forget past hardships.

Consulting the maps, we figured that with much paddling and some luck we could pass the city by dark and camp well below the noises. However, our ambitions were shattered when we ended up camping out that night on the left edge of the Lynchburg city dam. Because of the danger of prowlers, we took turns sleeping throughout the hectic night.

Daylight found us far below Lynchburg. However, the sewage disposal plant was doing its best to make us sick while the carp by the hundreds didn't mind the water at all. The river finally cleared up over 20 miles downstream of the city.

Somewhere below Lynchburg we paused for lunch and during the break I arrowed a huge carp of 15-20 pounds but my tackle wouldn't hold him and I lost the monster. After lunch we made fast time and passed Gladstone by midafternoon. We bought fresh food and cold drinks and set up a fine camp on the riverbank below the small town.

But thunderclouds soon rolled up, and we prepared for the only real storm of our trip. The rain didn't stop until morning, Jeff said. I was so beat that my deep sleep went undisturbed. Those plastic tarps sure paid for themselves.

Friday was a great day on the river. Wildlife was out in force after the all-night rain. Kingfishers, hawks, and crows were constant companions. On the banks we sighted muskrats, groundhogs and deer. Toward evening, catfishermen began showing on the river banks. They were the first real concentration of fishermen we met the whole trip. Our final campsite was nestled in a small island past Howardsville. We had canoed 37 miles that day, and setting up camp was a welcomed chore. The following morning we ran the only two rapids of any appreciable size on the James east of the Blue Ridge. They lay not far apart, one set below Howardsville and one set above Hatton Ferry. During a rest break at Hatton the ferry operator told us that Hatton Ferry is the only hand-operated ferry in the state and one of few in the nation.

When we paddled in at Scottsville on Saturday evening, we were a spectacle with dirty hands and bearded faces. I managed to find a ride to my home from whence I drove my pickup back to the river and gathered in Jeff and the canoe. Our journey across Virginia had been shorter than we at first had anticipated, but it had never lacked in beauty and excitement.

When Jeff's wife arrived from Richmond, her words were "Nobody will ever know how much I worried."

Jeff and I felt refreshed and ready to start life anew. Suddenly it was strange to read a newspaper or hear a radio, and home-cooked meals were never so good. Try a trip like ours and I'll guarantee you will never forget it . . . if you live through it!

Prelude to

SPRING

By JUDY M. PRICE
Deerfield

WINTER in its strength captures the mountains and the valleys for a time with deep snow carpets and frosts of silver. Yet as March ages, winter trembles in its path, and with quiet bloom, spring reveals its coming. The first flowers of the year are small and delicately designed. They are the pioneers: the sweet gentle glimmer of light before the burst of the bolder, brighter rays of spring's sunrise.

For its season and countenance, the spring-beauty was named. It flowers early, sometimes while the last snows of winter still linger. Pale pink or white, the rays have dark pink lines streaming from their center. The flowers rise from buried tubers that are not only edible, but very tasty. Boiled and buttered, they may be eaten like new potatoes. Though the roots supply a savory dish, the beauty that the flower offers the eye surpasses all other of its sense appeals.

Waving with the winds that carry spring, and growing with the spring beauty are three members of the buttercup family; the round-lobed hepatica, the rue-anemone, and the hispid buttercup. Only the latter bears the family name. Its petals glisten in the image of its benefactor, the sun. Yet as the sun grows stronger, the flower grows weaker. The hispid buttercup buds early and falls before the sun reaches its full strength.

On threadlike stems the flowers of the rue-anemone and the round-lobed hepatica stand, arranged not with petals but with sepals. The sepals of the hepatica may be blue, pink, lavender, or white. It bears leaves that are thrice deeply cut and sometimes purple underneath. The rue-anemone unfolds sepals of the purest white above a whorl of small, slightly lobed leaves.

The flower of the arbutus is a white or blushing tube that divides and flares into five petite lobes. The leaves are evergreen, remaining through the winter to welcome the fair flower clusters that open and exhale. When the arbutus flowers in force, the woodland is filled with a fragrance that tells of hidden hollows and enchanted waters.

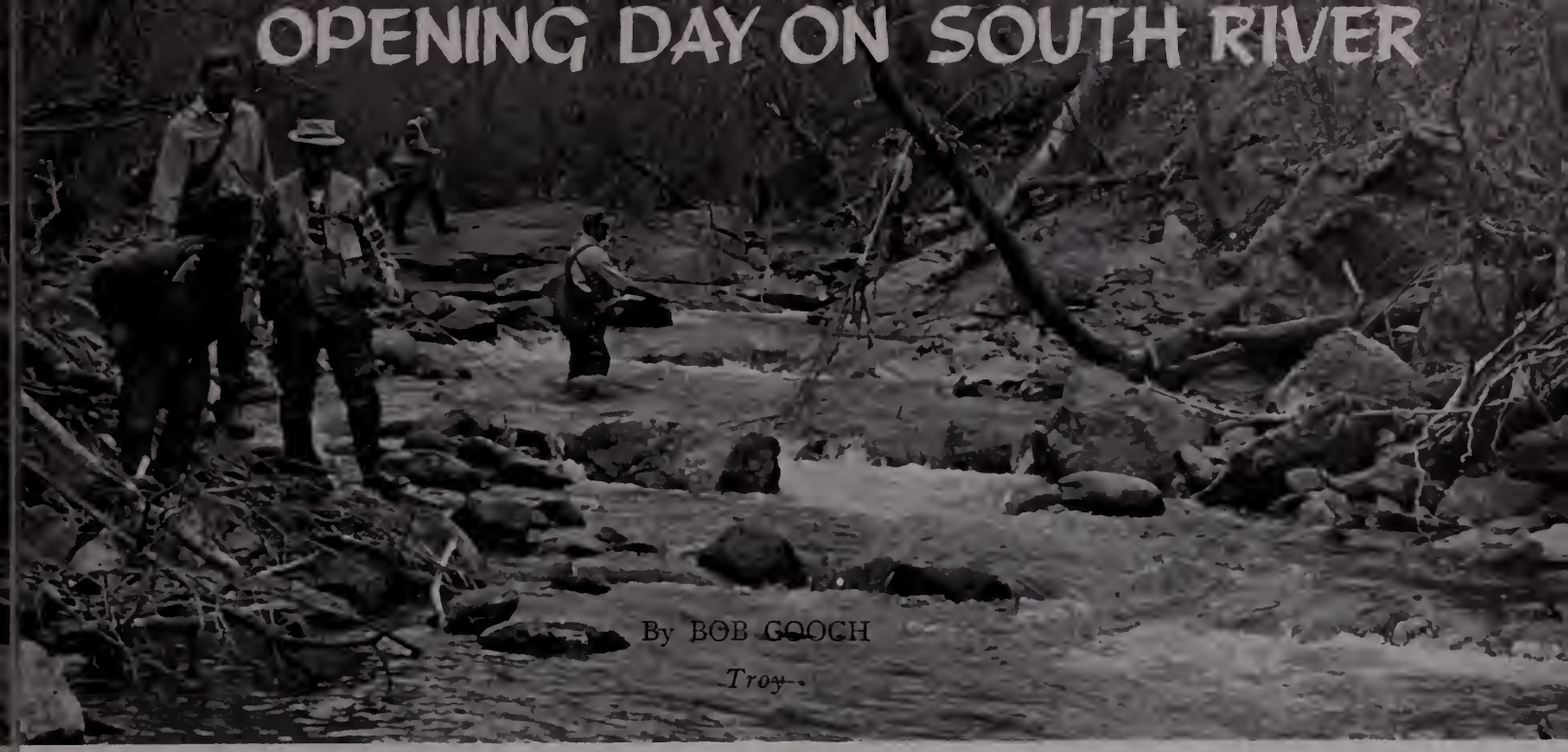
One of the mysteries of this time is the sweet pinesap, *Monotropsis odorata.* As both the Latin and common names disclose, the pinesap is scented. Its perfume is that of violets, but its bloom is that of a non-green plant. Like tiny bells, the nodding flowers hang from the curved stem. They, the stem, and the scale-like leaves are a waxen-rose color. The pinesap conceals itself beneath fallen leaves and pine needles, where it takes its nourishment from dead and decaying matter. An illusive little plant worthy of discovery.

Adorning the woodlands still moist from the snows of winter are the bloodroot and trout-lily. The bloodroot flower awakens, clothed in a large, lobed leaf. The petals are a snowy white but the roots yield a yellowish-red dye, and so the plant was named.

Of a brighter hue, the flower of the trout-lily, or adder's-tongue, opens and rolls back its yellow petals. Each plant holds one bud. Both the trout-lily and bloodroot exhibit distinctive leaves: trout-lily with two basal, deeply mottled leaves that stand nearly as high as the flower; bloodroot shows a pale sculptured robe.

The small native plants pour color and fragrance across the forest to show their certainty of spring's return. The quiet flora of the woodland beckons spring, and the splashes of the dandelions' gold across the open lands echo the call. With the rustling calendar leaves, the violets, orchids, and wild roses will reign, each in its own time. But now the sweet pale blossoms of the first flowering plants ornament the wooded hills and hollows, and the embellished forest holds a peace and restfulness that it extends freely to all those who wander there.

OPENING DAY ON SOUTH RIVER



By BOB GOOCH

Troy

THERE are South Rivers and South Forks all over the United States, and even several in Virginia. But the one I have in mind is the popular South River that springs from the eastern slope on the Blue Ridge Mountains and flows through Greene County to join the Rapidan. The Rapidan River eventually enters the mighty Rappahannock.

For a view of the South River from the top you take the Skyline Drive north from Swift Run Gap to the South River Overlook. The forest-clad valley stretches into the hazy distance with picturesque Saddleback Mountain guarding its winding right flank.

The headwaters of the South River is native brook trout water, subject to the Shenandoah National Park fishing regulations. They limit the angler to artificial lures and single hooks. The Park creel limit is 5 trout which must be at least 8 inches long. The trout season runs from the first Saturday in April through October 15. Hardy anglers park their automobiles on the Drive and hike down the mountain to the stream. While the going is rough the fishing can be rewarding.

Miles downstream the rushing river is joined by Entry Creek, another good native brook trout stream. Virginia secondary Route 642 crosses the South River just above the mouth of Entry Creek, making this section of the stream accessible from the bottom.

Neither stream is stocked upstream from the Route 642 bridge. The trout population is primarily native brookies with the possible exception of a few rainbows that work their way upstream from the put-and-take water.

Though the South River, like so many Virginia streams, has felt the heavy blade of the channelization bulldozer, it is still a classic trout stream. Upstream, water-worn boulders, rock-ribbed banks and the weather-beaten roots of ancient hemlocks funnel its waters here and yon, creating surging currents and singing rapids. There it is a prototype of a mountain trout stream. Downstream, the river flattens as it hits the farming country, but it is still a good trout stream.

In its lower stretches the South is a big stream. An angler can get by with hip boots, but chest waders are better. Opening day anglers often fish from the banks, many successfully.

Its accessibility makes the South a popular stream on opening day. It is one of our easternmost trout waters, convenient to many anglers.

To reach it from the east, you take U. S. 33 off of U. S. 29 at Ruckersville, and drive west toward the mountains for five miles to Stanardsville. At Stanardsville you turn north on Virginia primary Highway 230 and cross the river a couple of miles out of town.

On opening day trout can be caught beneath the bridge. Most anglers, however, turn left on secondary Route 621, following it west along the river until they find a stretch of stream that appeals to them.

From Entry Creek downstream to the Route 230 bridge there are approximately five miles of trout water —enough to accommodate hundreds of opening day anglers.

The trout populations in South River are typical of put-and-take waters around the Old Dominion. Rainbows are the predominant species, but the angler will also take brooks and a few browns. Some out-sized breeders go into the stream, creating the opportunity to catch a lunker.

I caught my first trout on South River. Over the years the river has been good to me. And it is convenient. Often I have taken my limit and been home by mid-afternoon. Other opening days I've fished until dark without filling my limit.

The South River will likely always be crowded on

Greene County's South River yielded trout for this young angler.

opening day, but so will most other stocked streams.

The true trout angler has to adjust his attitude to enjoy opening day on any put-and-take stream. I like the remoteness of a secluded trout stream as much as anyone, and frequently hike miles of rugged mountain country to enjoy it. Today most such waters are indeed inaccessible, and the physical exertion required to reach them puts them beyond the reach of many anglers. I consider myself fortunate that I can still hike to such fishing.

But I also enjoy the somewhat carnival atmosphere of opening day on the South River. Sure it's crowded, but I have yet to witness an unfriendly attitude on the part of an angler. Most seem to thoroughly enjoy the outing and the success of their fellow anglers. Their own catches may be modest, but good fellowship abounds. It is entirely different from the kind of angling the purist knows. It is much like fishing a shad run, a good run of stripers, or the coho runs out of the Great Lakes. The angler who is flexible in his thinking, and accepts opening day for what it is will enjoy it. The chances are good he will also catch a fine creel of trout.

I enjoyed one of my finest days on the South River several years ago when I chose an April opening to introduce my nephew, Johnny, to trout fishing. Again, the South was convenient.

It was past the noon opening hour when we arrived. We crossed the bridge and headed up the winding road that follows the course of the river. The traffic was heavy. But one stretch of the river, for some unknown reason, didn't have an angler on it.

I parked the car and we were quickly into our boots and in the stream, rods set up and baited with garden hackle. One deep hole looked particularly inviting, and I tossed my squirming bait into the current. The fast water caught it up and the line straightened—but that wasn't just the current! I felt the tug of a fish! I set the hook into a fat rainbow.

Don't let anyone tell you hatchery reared trout won't fight. Once they have adjusted to the cold water, they can be equally as lively as a native trout.

We had a couple of hundred yards of stream to ourselves, and within an hour I was nearing my daily limit of six fish. And Johnny, on his first trout fishing trip, was not far behind. By the middle of the afternoon we both had our limits and were homeward bound, Johnny now a confirmed trout fisherman.

Another opening day that stands out in my memory was successful because I switched tactics. Worms and salmon eggs are the usual opening day baits, particularly if the weather is cold as April weather often is. Canned corn also takes a big share of the opening day catch.

I have yet to resort to corn, but on this particular day I had gone through dozens of both worms and eggs with disappointing results. It was one of those days when few anglers were making spectacular catches. I decided to try artificials and got results almost immediately. The action continued fast until I was near my limit.

As an experiment I decided to try one of the hard fished holes. I cast to the rapids and let the current sweep my lure down the stream while I kept a tight line. Wham! That strike surprised me. Brook trout don't jump often, but they fight stubbornly. This one gave me a real battle, but finally filled my limit.

Like most fishing waters the South River has her secrets. Some fishermen return there year after year, and they get to know the river and unravel some of her secrets. Even hatchery trout locate food hideouts. Finding and remembering these dark places can be the key to success on slow days. And the best waters have their off days.

I have had slow days on the South River, but seldom ones that disappointed me completely. I rarely leave her clean waters without taking with me one or two of her trout.

I can hardly wait for the next opening day.

Johnny with a limit catch from the South River, taken on his first trout fishing trip.

1975 TROUT STOCKING PLAN

Legend:	* — National Forest Waters	R — Rainbow Trout
	B — Brook Trout	BR — Brown Trout

	Period Stocked		
	Preseason	May	June-Jan.
ALBEMARLE CO.			
City Water Works	R	R	
Moormans R., North & South Fork	R	R	R,BR
ALLEGHANY CO.			
Smith Creek*	B,R	R	
Simpson Creek*	B,R	B	
Pounding Mill Run*	B,R	R	
Jerry's Run*	B		
Clifton Forge Reservoir*	R	R	
AMHERST CO.			
Pedlar River (upper)	B,R	B,R	R,BR
Pedlar River (lower)	B,R	B,R	R,BR
Piney River & South Fork Piney	B,R	B,R,BR	R,BR
Brown Mt. Run*	B	B,R	
Davis Mill Creek*	B	R	
Enchanted Creek*	B,R	B,R	
Little Irish Creek*	B,R	B,R	
Pedlar River*	R	R	B,R
Rocky Row Run*	B	R	
Statons Creek*	B	B	
AUGUSTA CO.			
Back Creek	B,R	B,R	R,BR
North River*	B,R	R	R
Buffalo Branch*	B,R		
Ramsey's Draft*	B,R	B,R	
Braley Pond*	B,R	B,R,BR	B
Back Creek*	B,R	B,R	
John's Run*	B		
Kennedy Creek*	B		
Upper Sherando Lake*	R	R	
Lower Sherando Lake*	R	B,R	
Heartstone Lake*	R	B,R	B,R
Puffenbarger Pond*	R		
Elkhorn Lake*	R	R	B,R
Little River*	R	R	
Rowland Pond*	B,R	B,R	
Cold Spring Ponds*	B,R	B,R	
BATH CO.			
Bullpasture River	R,BR	B,R,BR	R,BR
Jackson River (No. 623)	R	B,R	R,BR
Jackson River (Gathright)	B,R	B,R,BR	R,BR
Spring Run	B,R,BR	B,R,BR	R,BR
Back Creek*	R	R	B,R
Wilson Creek*	B	B,R	
Mares Run*	B	B	
South Fork Pads Creek*	R	R	
Muddy Run*	B	B	
Jackson River (Hidden Valley)*	B,R	R	B,R
Piney River*	B		
BEDFORD CO.			
Hunting Creek*	R	R	R
Battery Creek*	R	R	
BLAND CO.			
Hunting Camp Creek	B,R	B,R	R
Laurel Creek	B,R		
No Business Creek	B,R	B,R	R,BR
Lick Creek	B,R	B,R	R
Kimberling Creek*	R		
White Sulphur Springs*	R		
Lick Creek*	R	R	R
BOTETOURT CO.			
Jennings Creek	B,R,BR	R	R,BR
Mill Creek	R	R	R,BR
Roaring Run	R	R	R,BR
North Creek*	R	R	R
Middle Creek*	R	R	R
McFalls Creek*	R	R	R

	Period Stocked		
	Preseason	May	June-Jan.
BUCHANAN CO.			
Hurricane Fork	B,R	B,R	
Grassy Creek	B,R	B,R	
Dismal River	B,R	B,R	
CARROLL CO.			
Stuart's Creek	B,R	B,R	
Big Reed Island Creek	B,R,BR	B,R,BR	R,BR
Little Reed Island Creek	B,R,BR	B,R,BR	R,BR
Crooked Creek	B,R,BR	B,R	R,BR
Burkes Fork	B,R	B,R	R
Lovills Creek	B,R	B,R	
Laurel Fork	B,R	B,R	
CRAIG CO.			
Potts Creek	B,R	B,R,BR	R,BR
Barbours Creek*	R	R	R
North Fork Barbaurs Creek*	R	R	
South Fork Barbours Creek*	R	R	
Cove Creek*	B	R	
Lipes Creek*	B		
Potts Creek*	R	R	
Broad Run*	R		
DICKENSON CO.			
Frying Pan Creek	B,R	B,R	
Russell Fork River	B,R,BR	B,R,BR	
Pound River	R	R	R,BR
FLOYD CO.			
Beaver Creek	B,R	B,R	
Burkes Fork	B,R	B,R	R
Howell Creek	B,R	B,R	R,BR
Rush Fork	B,R		
West Fork Little River	B,R	B,R,BR	R,BR
Meadow Creek	B,R		
Laurel Fork	B,R		
Mira Fork	B,R		
Little River	R,BR	R,BR	R,BR
Goose Creek	R	R	
FRANKLIN CO.			
Green Creek	B,R	B,R	R,BR
Blackwater River	B,R	R	
Runnett Bag Creek	B,R	B,R	
FREDERICK CO.			
Back Creek (upper)	B,R	B,R	
Back Creek (lower)	B,R	B,R	
Hogue Creek	B,R	B,R	R
Cedar Creek	B,R,BR	B,R	R,BR
Paddy Run (Forest line to No. 600)	B,R	B,R	
Paddy Run*	R	R	R
GILES CO.			
Big Stony Creek	B,R,BR	B,R,BR	R,BR
Dismal Creek*	R	R	R
GRAYSON CO.			
Big Wilson Creek	B,R	B,R	R,BR
Middle Fork Helton Creek	B	B	R
Big Fox (lower)	B,R,BR		
Big Fox (upper)	B,R	B,R	R
Middle Fox Creek	B,R	B,R	R,BR
Elk Creek	B,R,BR	B,R	R,BR
Peach Bottom Creek	R	B,R	R,BR
Helton Creek	R	B,R	R,BR
Turkey Knob Fork Creek	B,R	B	
Hale Lake*	R	R	R
GREENE CO.			
Ivy Branch	B,R	B,R	
South River	B,R	B,R	
Swift Run	B,R	B,R	R,BR
HENRY CO.			
Smith River	B,R,BR	R,BR	R,BR
HIGHLAND CO.			
Bullpasture River	B,R,BR	B,R,BR	R,BR
Crab Run	B,R	B,R	R
South Fork Potomac River	B,R	B,R	
Laurel Fork	B,R	B,R	
Jackson River	B,R,BR	B,R,BR	R,BR
Back Creek	B,R	B,R	
Laurel Run*		B	B

(Continued on page 21)

Natural Banquet Natural Sanctuary

By DORIS S. PEET
Williamsburg

YEARS ago, in mid-winter, we noticed that our small, suburban type feeder wasn't adequate, so we decided to turn over an old picnic table to the birds and squirrels. My husband loaded it every morning, and by noon it had to be replenished. We put another feeder out front. It, too, became a fast vanishing banquet. We concluded the financial drain was too much. There had to be a better way!

When the planting season came around again, it found us prepared. With a bit of reading, studying garden books and bird lore, and with our own observations and those of the children, we began to put in shrubs and trees that would give natural forage to our birds and small animals, so that while we supplemented their diet with store-bought bird feed, suet and other items, we were not the main source of survival for them.

There are shrubs and trees that produce fruits at all seasons. Even in the dead of winter the holly berries glisten, and the cherry laurel, the ligustrum, and many others supply berries. It is best to choose some plants that produce fruit in late summer and autumn, and others, like some bush loniceras, that set seed in late spring.

Most bird people and gardeners love the viburnums, for they offer both winter beauty and a food source for wildlife. Some species show red berries, some golden, some blue-black. Other fruit bearers are pyracantha, euonymus, japonica and members of the Ilex (holly) family. The American holly is an old standby, known to everyone, but two varieties are Ilex *Cassine* and Ilex vomitoria, both of which are native to Tidewater. Then there is Ilex glabra or inkberry, and Ilex verticillata or black alder. This is a deciduous shrub with red berries.

We are fortunate to have a forested ravine behind our garden, and it is home to several pileated woodpeckers. Although they never came close to the feeder, they would come directly to our bedroom window to take the berries from our dogwood. They also appropriated those dogwood trees at the woods' edge. These they seldom had to defend, but the tree at our bedroom window belonged rightfully to two mockers who took a dim view of the intruders and, though much smaller, drove them away. This is one example, but we often notice this intensity of the territorial drive.

Some of the birds that winter with us are not hardy. The wren, for instance, is a ground feeder and a bold fellow, but he needs help through the winter. Wrens, though friendly to people, and saucy in appearance and song, need ground cover into which they can quickly disappear. In summer they eat mightily of spiders and grasshoppers, beetles, and crickets, so in winter they need suet and meat added to their diet to keep them alive and chipper.

We found suet, or fat of any kind, to be much appreciated by most of the bird population, both in winter and in the nesting season, but during the cold months, those which are largely insectivorous need such provender to survive. We keep our drippings in a small plastic dish, such as a margarine container. We then suspend this on a nail outside our dining room window, puncturing the bottom when the grease is hard and inserting into a second slot at the opposite end of the bowl's bottom, a large headed, very long nail. The birds can then perch on the nail and feast. We have constant interesting visitors and no left-over grease for disposal.

The nuthatches, the chickadees, the titmice, and the little downy and great hairy woodpeckers are all frequently in and out of our bowl cafeteria, but for those birds who don't perch so riotously, we keep pieces of suet flat in a tree feeder, where they can get a firmer stance. To this flat feeder come all species from jays and cardinals to the various sparrows. On a tray in a window, we put out left-over bacon bits, ham fat, cut-up apples or other fruit, fresh or canned, left-over vegetables such as corn, butter beans, peas and potatoes, and all are quickly gobbled up. (We seldom have enough scraps for our wild population for we have skunks, possums, and a raccoon regularly at the back door each night, who are disappointed if no welcome sign is out.)

Although all of this provides help for the birds, they also need their natural foods. The nuthatch, thrasher and the woodpeckers like acorns and pine seeds, and chestnuts when they can find them. (These, along with the blue jays, also really enjoy peanuts.) The cedar waxwings love the blue berries of the red cedar (Virginia juniper), and will gorge themselves until they can hardly fly.

But the cedars do more than produce food for wildlife; they also offer refuge from weather and predators. A hawk's shadow overhead sees the cedars fill with small birds. Goldfinch will settle at night into its deep protection. The sparrows often choose it and

other conifers for nesting, and in the dead of winter, our snowbird, the junco, finds shelter in the cedar.

Red cedar and white pine make lovely tall hedges that add great beauty to property, but they also provide cover for game birds. Some years ago, several ring-necked pheasants were released in our area, and we occasionally see a couple still about. They run out of the blackberry and honeysuckle thickets, staying close to the brushy row of cedars. They, along with coveys of fat quail, scratch about in the heavy floor of pine needles. We discovered that for game birds, it is best to keep brush piles, thickets and windbreaks of evergreens around the edges of the yard, for they can find no cover in a well kept, proper garden.

In bitter weather we put extra food near the places which they frequent, and when it snows, we clear away patches so that they can reach the bare earth. Quail need gravel, we learned, so we also try to clear the edges of our sandy lane. In the summer, if you like the whistle of bobwhite, have a mulberry tree about. I wish we had one, for they dearly love mulberries. In return for any favors you do them, they will eat seeds of ragweed, chickweed, and are gluttons for insects. Actually, like the jay, the cardinal and woodpecker, they enjoy a wide variety of diet, and will eat bayberries, wild cherries, blackberries, holly and sumac berries, dogwood, sour gum and honeysuckle berries. If you want to encourage a great many bird tenants, arrange some of these wild food sources about your home, working them in to your more formal garden setting.

Much can be accomplished with a minimum of planning. We have used bayberry and ligustrum for hedges, but many others are fruit-bearing, and ornamental. Among low evergreen hedges there are barberry, Japanese yew and arborvitaes. For a hedge of medium growth, the privets, buckthorn, and cotoneaster are good. Arrowwood makes a taller, unsheared hedging, and there are many evergreens for very tall screening such as our red cedars provide.

There are a wide variety of ornamental shrubs that are decorative but will also provide food and lodging for wildlife. (The wood thrush and robin like to nest in shrubbery, as does the cardinal.) Shrubs can be tastefully arranged by color and foliage. The black choke-cherry and buckthorn have black berries, some viburnums, with rod, arrowwood and nannyberry are blue-black. Then there is the red chokeberry, Japanese barberry, white dogwood and winterberry, the burning bush, American holly, mountain ash, fire-thorn and again, some viburnums, to offer you a selection of red berries. If you want contrast, the snowberry and the coral and red dogwood produce white berries.

Aside from food, and protection, birds and wildlife need shelter, places to build their nests and raise their young. Of course, the woodpecker tribes prefer to nest in hollow trees, but other birds also use dead trees or old stumps for nesting. The nuthatch likes a hole in a decaying trunk, and he prefers a deciduous tree. The chickadee likes a natural cavity. He will use an old woodpecker hole or carve himself a little home in a rotton stump. He is a very valuable bird as well as a lovable and entertaining one. He wages all-out war on insects, regardless of size and will even take them on the wing. His presence is certainly worth a dead tree or old stump left standing.

We have also found that vines encourage the birds to come close to us. Our trumpet vine is a favorite of the hummingbird, along with our mimosa blossoms. A friend tells us that bittersweet with its orange berries and thick foliage entices feather visitors to her porch. We notice that where the ivy grows thick on the bricks, there are always nests of whitethroats and song sparrows, and all kinds of small birds use its cover for foraging and safety.

Although we fight the honeysuckle in order to prevent its taking over our flower beds and cedar trees, it enhances stumps and fence posts, attracts the hummer with its sweet blossoms, and feeds many species during the dreaded winter with its dark berries. Coming home on a late spring evening, the perfume of the honeysuckle easily convinces you that there is a paradise.

Our flower bed is also a late autumn buffet for our birds. Aside from the sunflowers which delight the cardinals and chickadees, the seed heads of cosmos, zinnias, black-eyed Susans, and marigolds are welcome in most bird diets. Certainly they attract goldfinches juncos, chickadees and sparrows.

Sand, or light, loose earth, is as necessary to the birds as food and water for they bathe in dust to free themselves of lice, and it is an important part of their grooming. A well-worked flower bed is very useful, and a sandy walk or driveway will contribute to a happy selection of birds around your home-world.

As the area of natural habitat grows less and less, we have to try harder to simulate for our bird friends their accustomed haunts. It takes a little thought and planning, but it can be done cheaply, often with wild bushes and trees, and any cost of labor is far outweighed by the pleasure that comes to us.

"Oh, when I am safe in my sylvan home,
I tread on the pride of Greece and Rome:
And when I am stretched beneath the pines
Where the evening star so holy shines,
I laugh at the lore and the pride of man,
At the sophist schools, and the learned clan;
For what are they all in their high conceit,
When man in the bush with God may meet."

—Ralph Waldo Emerson

The RANDY CARTER AWARD for River Conservation

Photo by Joe Wiseman

By PETER W. ROWE
State President, Float Fisherman of Virginia

TO those who knew him and knew of him, Randolph H. Carter of Warrenton, Virginia, was "Mr. Rappahannock." Through his seventy years on the rivers and trails of Virginia, West Virginia and North Carolina, he above all came to symbolize the fight against the proposed Salem Church Dam on that river. A life-long resident of Fauquier County (and occasional contributor of articles to *Virginia Wildlife* magazine), he was an avid canoeist whose book, *Canoeing White Water,* is today a bible for those who go on the rivers of this and surrounding states.

But more than one who simply "played" on our rivers, he was devoted to and constantly espoused their preservation and protection across the State. On the Rappahannock it was a long and oftentimes a lonely struggle. He fought it in Congress, in the State Legislature, before County Boards of Supervisors and City Councils. He talked it in the streets to strangers and friends alike, he wrote of it in newspaper and magazine articles, and he never stopped.

Randy did not live to see the end of the fight against Salem Church Dam. He died in January, 1974, of a stroke, just a few short months before the Corps of Engineers announced the project was no longer feasible. No man did more to save this river and its natural beauty for future generations.

Some of the Float Fishermen of Virginia had been on the riverbank at Eley's Ford with Randy Carter in the fall of 1973. He met us there around an early morning campfire to encourage us in our own efforts to save the Rappahannock from the Dam. The smell of coffee and sausage rose among the trees as the sun burned away the mists of the night. It seemed we could almost hear the ghosts of Civil War troops moving through the still morning woods. The memory of that morning, and of "Mr. Rappahannock," are very much with us still. We, and other friends and admirers of Randy, wanted to do something that would provide a permanent memorial to him, but more, something in his own tradition that would provide recognition and encouragement to others who have followed him in the fight to protect Virginia's rivers in their free-flowing, natural state.

Our answer was to establish, with the help of the Virginia Wildlife Federation, the annual Randy Carter Award to be given to that person in the Commonwealth who, during the preceding year, has made the most significant contribution to the protection, preservation and understanding of our free-flowing rivers and streams. This award will be administered by the Federation as a part of its annual Conservation Awards Program, and the first such award, for 1974, went to Dr. Richard Skeppstrom of Norfolk.

For Randy Carter, as for many of us, civilization alone was not enough. In his book he said: "We must have paved highways, but we need quiet woods roads too. We need rivers for factories. But we also need rivers secluded in a wilderness. We need to see the wild geese flying against the autumn sky to give us peace after the roar of the airplane. We need the lonely loveliness of a wild flower, and the eerie hoot of the owl in the deep forests. Unless we realize how much we need these simple pleasures, the time will soon come when we will not have them." We hope the annual Randy Carter Award will help to keep that time from ever coming.

VIRGINIA WILDLIFE ☆ ☆ ☆ ☆

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

BOATING SAFETY GOES ON T.V. A new series of boating safety spots will be released in the late spring to Virginia television stations by the Commission of Game and Inland Fisheries. The three ads feature life size puppet characters photographed in three dimension and color. The puppet characters convey a serious boating message with humor. In conjunction with the T.V. spots, a series of radio messages on boating will be made available to Virginia radio stations. Also included in the safety campaign will be bumper stickers and posters (printed on waterproof paper to be used in boating areas). All elements of the new Game Commission boating safety program will feature a new logo that will be the official boating safety symbol for Virginia. The trademark features three singing pelicans framed with a life ring and rope. The colorful logo is the major element in the bumper stickers and is a part of the television ads.

LAND DONATED FOR EAGLE SANCTUARY. Control over more than 1,000 acres of land in South Dakota and Nebraska that will serve as a sanctuary for the American Bald Eagle was turned over to the Department of the Interior's Fish and Wildlife Service in December. The land was donated jointly by the National Wildlife Federation and the 7-Eleven Food Stores division of the Southland Corporation of Dallas, Texas, as the climax of a special fund raising campaign, "Save a Living Thing." The new national wildlife refuge will be named for the late Senator Karl E. Mundt of South Dakota and will be managed by the Fish and Wildlife Service. "Save a Living Thing" was a four-month-long campaign run by Southland Corporation with the help of the National Wildlife Federation in which Southland donated one cent from the sale of each "Slurpee" drink in its 7-Eleven stores to a special fund for the land purchase. Each of the non-throwaway cups portrayed an "endangered species" and carried a brief description of the animal. The money raised from the sale of the crushed-ice drinks, added to donations received by Southland and the National Wildlife Federation, totaled more than $200,000. The refuge's Missouri River bottomland is a winter sanctuary for as many as 300 bald eagles each year.

WILDERNESS SOCIETY ANNOUNCES '75 TRIPS. The Wilderness Society recently announced its 1975 schedule of guided trips to many of America's most spectacular wilderness areas. Wilderness areas included range from Everglades National Park in Florida to the proposed Gates of the Arctic National Park in Alaska. Most are in the west - areas like Weminuche in Colorado, Wind River in Wyoming, Absaroka in Montana and Grand Canyon in Arizona. Eastern trips include the Great Smoky and Joyce Kilmer-Slickrock wilderness areas in North Carolina and the Adirondacks in New York. Always popular are canoe trips in the Boundary Waters Canoe Area and Voyageurs National Park in Minnesota. Trips vary in length from four to 12 days. Groups are kept small to enhance the quality of the participants' enjoyment of nature. A physician ordinarily accompanies each group. Family participation is encouraged. A brochure describing all of the 115 trips is available for 25 cents to cover postage and handling from the Trip Department, The Wilderness Society, Western Regional Office, 5260 East Evans Avenue, Denver, Colorado 80222.

THE FIGHT TO SAVE OUR WILDLIFE

Wildlife May Be The Loser

By ROBERT E. LERESCHE
Alaska Department of Fish and Game

THE social side of conservation is where the crux of many emerging issues lies. The question is not how we might "achieve and maintain variety and optimum numbers of wildlife," but rather how we must "achieve and maintain variety and optimum levels of human experiences with wildlife." There are three groups of people who seem continually determined to argue with one another, but whose objectives are in fact close to identical. These are hunters, those who would abolish hunting, and wildlife managers. While these groups debate and in-fight over what constitutes proper use of wildlife resources, others continue the blind march of ecological suicide that will eliminate any choice we have in the matter of variety and numbers of wildlife. Our common goal should be the perpetuation of a variety of human expression in what is left of our natural world, and our common enemy those who would destroy this natural world and thereby eliminate a priceless potential for human experience.

TO THE ANTI-HUNTER. You are a new phenomenon: new in American history and new in the evolutionary history of mankind. According to studies you tend to be more educated, more wealthy and more urban, and to include a higher proportion of women than do hunters. You have been very successful, in an increasingly urbanized environment, in achieving your goals over the past several years. You have made important contributions to the welfare of rare and endangered species, and have forced the hunter to undertake a reexamination of his behavior.

It may surprise you to hear me say that you are in danger of losing what you strive to protect. Extremism has a way of catching up to one in the fickle public arena. Flushed with success, you have often become unreasonable and oppressive, and have forgotten human social rights and ethical constraints in your rush to protect the rights of other animals. At your worst, you are blindly intent on eliminating an important aspect of human diversity, and foreclosing any future for an important and long-satisfying human experience. You would prohibit something that is culturally and genetically based, and is emotionally fulfilling to many of your fellow human beings. You would prohibit something that is ecologically sound, and that most ecosystems have evolved alongside.

Most important, by focusing your considerable energies against hunters who share your perception of man's relationship to nature, you give free rein to others who don't give a damn whether wildlife survives another day. "Those who would protect all animals from hunters, but leave them to starve on a depleted habitat, have some strange kink in their humanitarianism. Those who would eat meat, but oppose all killing of animals, live at best in a peculiarly sheltered world."

As a thoughtful conservationist you should consider several suggestions before expending your energies to fight against hunting: Learn that the real danger to ecosystems is not limited killing of game species, but rather wholesale destruction of substrate and producing species and injection of pollutants. Learn that once an ecosystem is altered by man (and few remain unaltered), further manipulation is often necessary to preserve it. And learn more of the "natural" lives of wild animals and the conditions they have evolved to cope with. Love based on knowledge transcends emotional attachment based on fantasy and misinformation.

Second—learn more of human evolution and of man's primordial relationships to natural systems. Man has long been at or near the top of the food chain, and he has long been intertwined with many prey species and is even yet a predator. You will discover how many of man's behavioral and cultural attributes—attributes as basic as family structure—evolved because of his hunting heritage. You will learn that hunter-gatherer societies are the least destructive, and that agricultural societies have been responsible for atrocious environmental degradations. You will learn that hunting man has always felt the greatest reverence for wild things, and has always mourned their disappearance (and strived for their protection) more than has urban man. The closer man returns to the natural world, the more he returns to hunting.

Third—learn to distinguish between hunters, hooligans and exploiters. The true hunter sincerely enjoys what he does and finds himself fulfilled and brought closer to nature by it. He cherishes the intimacy and respect inherent in the hunter-hunted relationship, and understands wild things better than anyone else. He is

Condensed from "Social and Ethical Considerations in Conservation," a paper presented at the 1974 National Wildlife Federation annual meeting.

no more a bloodthirsty "kook" than you are.

Fourth—learn what hunters have done for wildlife. It may be a difficult thing to face, but you are a Johnny-come-lately to conservation: the hunter was talking about ecology, pollution, habitat destruction and the "balance of nature" before you ever heard the words. Hunters' dollars have paid for research and millions of acres of land that support millions of wild animals. It is frightening to imagine what would be left of wild systems on the earth had not hunters fought for decades to preserve them when nobody else cared.

TO THE HUNTER. By now it is aphorism that the hunter is an endangered "species," and that social and ethical concerns of non-hunters are the basis for your precarious position. You realize that despite the philosophical impossibility of debating "taste" or personal ethics, your actions are suddenly socially unacceptable. Your public image is low and declining, and you are worried. Arguments against hunting have recurrent themes, but can be divided roughly into three categories: the "cruelty argument"; the "uncivilized argument"; and the "ecological argument."

The Cruelty Argument is straightforward—killing is cruel. Wild animals are happy and innocent until man comes on the scene with his roaring machines, traps, and big guns. The animals he kills suffer, their bereaved families mourn their loss. Their offspring starve. You say . . . ridiculous! Don't put man's feelings onto animals. They have no emotions . . . but as one tries to develop this counter argument the real truth becomes plain—there is no proof of either side, and "their" ideas are as true to them as yours are to you.

The Uncivilized Argument is more insidious and a little less fair, for it attacks the hunter rather than the act of hunting itself. Hunters are culturally immature—throwbacks to the caves or at least to the Dark Ages. Or, worse yet, they are sexually inadequate, and their guns are merely extensions of Freud's cigar.

Counter arguments to this are many and fascinating. Man evolved a hunter, still retains the trait, and a healthy human personality accepts, rather than represses, its true nature. Hunting is a better outlet for man's inherent aggressiveness than is war. A *natural* human being can be defined as one who hunts.

The Ecological Argument maintains that hunting endangers the ecological balance, and may lead to extinctions. Look at the passenger pigeon, the bison, and great auk. Look how the walrus and seals and polar bear were almost extinct before we saved them with the Marine Mammals Protection Act.

These criticisms are often based on misinformation. We all know that since modern game management no species in North America has been severely depleted by legal sport hunting and many have benefited tremendously. We also know that sport hunters have been the single strongest factor in preserving all kinds of wildlife and wild lands over the last few decades and in financing the work that has taught us what we know of wildlife ecology.

A recurrent theme in all the anti-hunting argument: the hunter is a slob. He thinks *only* of killing. He has no respect for the rights of other humans or other animals. Can you deny this categorically? Do *you* like all who are called "hunters?" I hope not.

It has been said that "America is the only nation that has gone from barbarism to decadence without creating a civilization in between." I wonder if that does not all-too-truly describe the development of our hunting culture in this country? The days of non-regulated market hunting may have merely faded into the days of mechanized, no sweat, kill 'em and take 'em home hunting, and it is hard to discern any culture or set of ethics that developed in between. I know it is there, somewhere, but it is difficult for a non-hunter to see. Stating a civilized set of ethics loud and clear—by deed much more than by words—is in my mind the only salvation for the sport of hunting.

How *do* we educate people to believe in hunting? Help them to believe in *hunters*.

First—decide, "What *are* my own personal ethics regarding hunting and conservation?" A difficult question. How many of us have—just once—slipped a little? Ethics have a way of eroding very quickly at the tiniest breach.

TO THE WILDLIFE MANAGER. You, the professional, are caught in the middle of an apocalyptic struggle that will decide the future of the things you believe make life worth living. You are beset on one side by hunters, on another by anti-hunters, and from all around by drillers, ditchers, cutters, builders, burners and polluters. You have welcomed a new "ecological awareness" in hopes that someone finally might understand the multitude of threats to wildlife—and often have been rewarded with counter-productive emotion.

It is crucial that you, as "wildlife" managers, recognize that what you are truly managing for is a *diversity of human experiences with wildlife*. In many cases this means you are more a "people" manager than a wildlife manager. "Producing game" is no longer enough.

Realize that you are managing ecosystems, not deer, cottontails or mallards. Your obligation extends to all the "nongame" creatures which are part and parcel of diverse systems. Without songbirds, insects, reptiles, rodents and all the other animals which are never harvested, the natural world would hold much less fascination for hunters and non-hunters alike.

You have often forced biologically sound "maximum sustained yield management" on the public, stressing the dollar values involved rather than the emotional values left unrealized. Perhaps this contributed to the adversary relationship that has developed between you and both hunters and anti-hunters.

Fred Pugh

Smith Mountain Smallmouths

By BILL COCHRAN
Roanoke

EVEN though Virginia has its share of fine smallmouth bass streams, that send their cool, mountain waters over rocky bottoms, the fisherman searching for a trophy smallmouth will do well to concentrate on one of the state's major impoundments —Smith Mountain Reservoir. No other water produces as many lunker smallmouths. At least, this is the clear assumption I get after careful study of the Commission of Game and Inland Fisheries' trophy fish citation report for the past several years.

The 20,000 acre, clear-water impoundment, nestled in the foothills of the Blue Ridge Mountains, just southeast of my home in Roanoke, was impounded in the early 1960s. By the 1970s, it had blossomed into a smallmouth hotspot that shows no signs of abating. In 1971, for example, some 50 percent of all the smallmouth entered in the statewide fish citation program came from Smith Mountain. A smallmouth must weigh a respectable four pounds or more to rate a citation. The 1971 fish ranged up to 7 pounds, 3 ounces. Since then, at least 40 to 50 percent of all citations have continued to come from Smith Mountain, including a jumbo percentage of the very largest—fish six pounds and above.

All this, in my opinion, has projected Smith Mountain into national significance as a smallmouth hotspot. Some serious fishermen go as far as to believe the lake will yield a smallmouth that will top the 11 pound, 15 ounce world's record landed several years ago at Dale Hollow, Kentucky. An interesting thought. However, as yet the impoundment has not produced a smallmouth to surpass the eight-pound state record credited to Claytor Lake in 1964. Considering the heavy bass fishing pressure Smith Mountain presently experiences, especially during the spawning season, a world's record seems less likely now than it did earlier in the 1970s. Nonetheless, smallmouth catches in the four to five pound class remain abundant.

Although smallmouths can be landed any month of the year, and a 7 pound, 2 ounce January 1972 catch is a good reminder of that, in 1973, according to the citation list, the best trophy months were March and April; then again in November. April normally has been the best month of all, some years accounting for nearly 50 percent of all the Smith Mountain trophy smallmouth. This month brings together two important factors: heavy fishing pressure and spawning conditions which move the bass into shallower areas where anglers are most likely to get a lure to a egg-laden female.

It has been my observation that outstanding smallmouth fishing at Smith Mountain often comes in spurts of about a week's duration. Early last November, for example, a handful of cold weather anglers for about a week were docking with eye-popping stringers of smallmouth that would average three pounds apiece. One of the successful fishermen, Dale Wilson of Huddleston, a coach at Staunton River High School in Bedford County, landed four big smallmouths in a scant 30-minutes time.

The Smith Mountain smallmouth not only have established definite times when they most likely will strike, but in addition they have inhabited certain sections of the reservoir. A fisherman who puts these two factors together—the best time and the best spot—clearly has boosted his chances of catching a citation.

By the early 1970s, experienced fishermen pretty well had established where the smallmouths' favorite habitat occurred in Smith Mountain, a two-prong reservoir extending about 40 miles in length. In 1974,

Good spring and fall lures include the spinner bait and plugs like Super-R.

fisheries research at the lake, conducted by Larry Hart, state fish biologist, sharply concurred with what fishermen had learned with rod and reel.

After taking population samples of the lake, Hart projected the smallmouth population density on a graph. According to his findings, smallmouth numbers are low in the upper reaches of the Roanoke River arm of the impoundment. They begin to increase just above Buoy 35, and quickly peak downstream at Buoy 19, just below Beacon Marina. The populations decline some from Buoy 19 downward to the dam, but this remains to be some of the lake's top smallmouth habitat.

Starting up the Blackwater River arm of the lake, from its mouth upward to Buoy 9, is good smallmouth country, according to Hart's study. From there, smallmouth numbers are shown to decline until Buoy 16 is reached. From this point, there is an increase in populations up to Smith Paradise, which is just above Buoy 25. Nowhere on the Blackwater, according to Hart's findings, do smallmouth populations reach the high numbers located in the lower Roanoke River section of the lake. The smallmouth has shown a distinct dislike for the upper Roanoke River arm of the lake, where the water is nutrient-rich and thick with forage fish. This area, however, constitutes some of the very best largemouth bass waters. But smallmouths prefer the clearer, cleaner, deeper water of the lower Roanoke River arm.

Even within its preferred habitat, naturally there are certain spots the smallmouth likes best. Experienced smallmouth fishermen, such as Dale Wilson, Bill Easterly of Bedford, and Kenneth Gilbert of Lynchburg, concentrate on these peak hotspots and consistently catch impressive numbers of smallmouths as a result.

Writing only a couple years ago, I would have suggested exerting all efforts on rocky areas, such as rocky points, rocky shoals rising from deep water to shallow, gravely or rocky stretches of shoreline, stony bars, coves with rocky, gravely or sandy bottoms, and lone rock outcroppings along the shoreline. While rocks continue to be a good common denominator for locating smallmouths, experienced fishermen recently have discovered that smallmouth—often the larger ones—also can be found on hard mud bottoms.

During the March-May and October-November fishing, stick-ups, such as pieces of brush projecting upward from the bottom of the lake off points, along shorelines and in coves are excellent places to find smallmouths. In the summer months, structures, such as sunken islands which contain rocks or brush, are good spots, along with deep water points that project well out into the reservoir, particularly those that suddenly dip sharply down into a creek channel.

As for lures, some fairly new plugs such as the Super-R, the Magnum Scooper and the Super Scooper have been working well recently. Good colors have been the crawfish and bone. An old favorite smallmouth offering is the jig-and-worm combination.

Bill Easterly works a jig around stick-ups at Smith Mountain Reservoir.

Some Smith Mountain smallmouth authorities believe in small lures and lightweight tackle. Bill Easterly is one. The tall Tennessee native likes a one-eighth ounce maribou jig with a four inch piece of plastic worm impaled on the hook. He chooses blue colors on bright days and black on cloudy days and during the evening hours.

Easterly tosses his offerings with scant six-pound line on a lightweight spinning outfit. Using rocks and brush as targets, he allows the lure to sink naturally to the bottom. Often, a smallmouth will strike the offering on the way down.

"I concentrate on the end of my line," Bill explains. "They don't hit the jig hard—about like a bluegill."

If the lure isn't struck as it plunges downward, Bill retrieves it with a slow, steady crank of his reel, holding his rod tip high. "I don't jig it up and down."

Anglers like Dale Wilson and Kenneth Gilbert prefer bait casting reels, with line in the 14 to 17 pound class when they toss plugs. In addition to the Super-R, Kenneth often has good results with a one-fourth ounce spinnerbait tipped with a small piece of plastic worm. Chartreuse is a good color. At times, especially late spring, surface lures will bring exciting results.

The sporty fighting ability of the smallmouth is well known and rightfully praised. A somewhat more handsome fish than the largemouth, they generally are conceded superiority in dash, stamina and acrobatics. To capture a four-to-five-pounder requires more skill and more effort than taking a largemouth of comparable size. But a good place to get the job done is Smith Mountain Reservoir. Being there at the right time, at the right spot and with the best lure is a big help!

Jerry Johnson explains how rocks are formed.

When

TEACHERS GO TO SCHOOL

To Learn about Virginia's Resources

Text and Photos

By MEL WHITE
Information Officer

THE rail thin tires of the 10-speed bumped and grooved over and through the cobblestones as I turned into the Duke of Gloucester Street. Williamsburg, the colonial capital of Virginia, was tourist filled as usual for a summer morning. I could see the Wren Building of the College of William and Mary less than a mile away. I was late, unfamiliar with the bike, and trying to shift into a higher gear—an errant tourist, a bigger than usual cobblestone—crash!

The blue ring binder skidded across the 18th Century pavement ahead of me and stopped, its neat printing coming into focus. *William and Mary Conservation Course:* what a way to start learning about my adopted state. I and the bent bike hurried on. Ed Mundie, VPI&SU Natural Resource Conservation Extension Specialist and director of the course, was leading off this morning and whatever you did in this course, they said, you didn't come late to Ed Mundie's classes.

Ed Mundie didn't have time for latecomers probably because he is a very busy man come summer. Having originated this conservation course about 19 years ago, he runs at least two courses in separate colleges at the same time, scurrying between them like a man half his age. At this particular time, the three-week session was being held at William and Mary in Williamsburg and at Virginia State College. Earlier classes met at VPI&SU at Blacksburg and Madison College, Harrisonburg, although in 1975 the VPI&SU facility at Reston will be substituted for the Madison course.

These summer sessions are designed primarily for teachers but are open to practically anyone interested in conservation. It should be noted, however, that the classes provide a great deal of useful information in a very short time period and the name of the game is work and study. Our class was made up of educators, both primary and high school, three foresters, four game wardens and a little grey-haired lady who was "just interested in everything."

Before my bike bruises had had time to nag me that morning we were into the session. Ed Mundie having made his opening remarks, Jerry Johnson from William and Mary's geology department took over, giving us first-year geology—the whole first year in two days! In his animated "don't just sit there, say something kids" style, the Conservation Short Course was off and running. Pace for this marathon was fast. That's a "gneiss" rock was the joke of the day as classes adjourned to a basement geology lab and Virginia's rocks and minerals went on parade, a parade that ran from creation through tomorrow. We all groped, some of us further back than others, wondering if we could remember all this for that bane of all students, the test.

Test time came and went. Many were surprised at how much we had learned in so short a time, but no one had much time to reflect. We were into forestry now and Bob McElwee from VPI and Ed Rodger from the Virginia Forest Service were orchestrating the program. Cambium, Xylem, Phloem, clear cutting—the inside and outside of Virginia's forests came to life. Being a West Coast person, there was for me an abundance of fascinating new flora.

Talk about fascinating. The first of several field trips was in progress. There is nothing quite like going afield with an expert and actually seeing the subject face to face. When Ed Rodger said here's how we fight

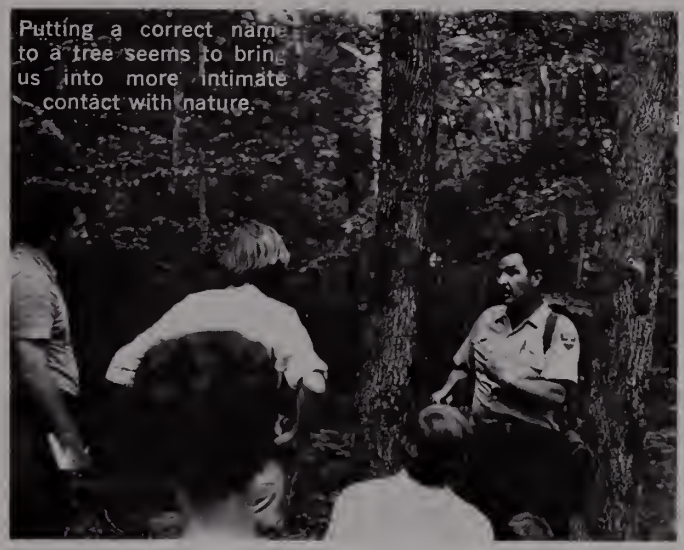
A fire plow in action adds excitement.

a forest fire in Virginia, the bulldozers roared away cutting a fuel break. Talk about growing pine for pulp and there is a botanist at the state nursery grafting a seedling for you. Did we say pulp? West Point's mill was opened for a tour with the Chesapeake Corporation's people explaining the step-by-step process as we watched pine logs being turned into kraft paper.

More classes, then a walk through the woods with a state forester. I don't know how many trees we looked at that afternoon, but I know that that stretch of woods, and most others in Virginia, are now familiar.

What a giant step from the woods to Chesapeake Bay and its surrounding marshes. Jim Lanier from the Virginia Institute of Marine Science at Gloucester Point brought his watery world to the classroom. It was fascinating to learn how important saltmarsh cordgrass in a bog was to sea life miles away and how vast and important our commercial fish and shellfish industries are to the economy of the Commonwealth. We watched marine biologists devising more efficient ways of raising oysters and studying the blue crab.

Soil? Well I said to myself, dirt, something that farmers grub around in from dawn to dusk. Wrong! It seems that Professor Mundie has been grubbing around in it longer than just about anyone. One of the progenitors of the nationwide system of soil conservation districts, Mundie brought to class a bewildering array of "dirt": huge slabs of earth, "soil profiles," more properly. For the first time in the course I felt out of place. Soil was not my forte and I knew how the little grey haired lady had felt in geology, forestry and oceanography—lost. Amazingly, it seemed, Ed Mundie and his cohorts from the Soil Conservation Service put weeks before.



Putting a correct name to a tree seems to bring us into more intimate contact with nature.

There is a certain value in digging the hole you are going to investigate, and the class shoveled right in. Involved up to their hip boots in "soil" sometimes, but involved and more vitally interested as the session scurried along.

Wildlife. Well, I can breeze through this one, I thought. Burd McGinnes, Professor of Wildlife at Virginia Polytechnic Institute, doesn't teach cinch courses. I went to work! We all did, and learned about the wildlife that runs, scampers, slithers and flies around this historic state. Field trips, of course, boarding William and Mary's fleet of green buses to take a face-to-face look. The Game Commission sent Information Officer Francis N. Satterlee down to explain their function.

Suddenly, and that's how it seemed to me, the "short course" was almost over. We had romped through enough information to keep many a school busy for a year.

Could we remember all that? I glanced around the classroom. Twenty-five people of varied background and education all doing just exactly what I was doing, busily filling page after page with answers and explanations. And, doing it with an enthusiasm that was even greater than when they started the course a short three weeks before.

Tear off this coupon and mail to: Virginia Resource-Use Education Council, c/o E. W. Mundie, Seitz Hall, VPI&SU, Blacksburg.

I am interested in the Natural Resource Course offered at:

- [ ] Virginia Polytechnic Institute and State University, Blacksburg. June 16-July 3, 1975
- [ ] Virginia Polytechnic Institute and State University, Reston. July 1-July 22, 1975
- [ ] Virginia State College, Petersburg. July 9-July 29, 1975
- [ ] The College of William and Mary, Williamsburg. July 23-August 12, 1975

Date _____

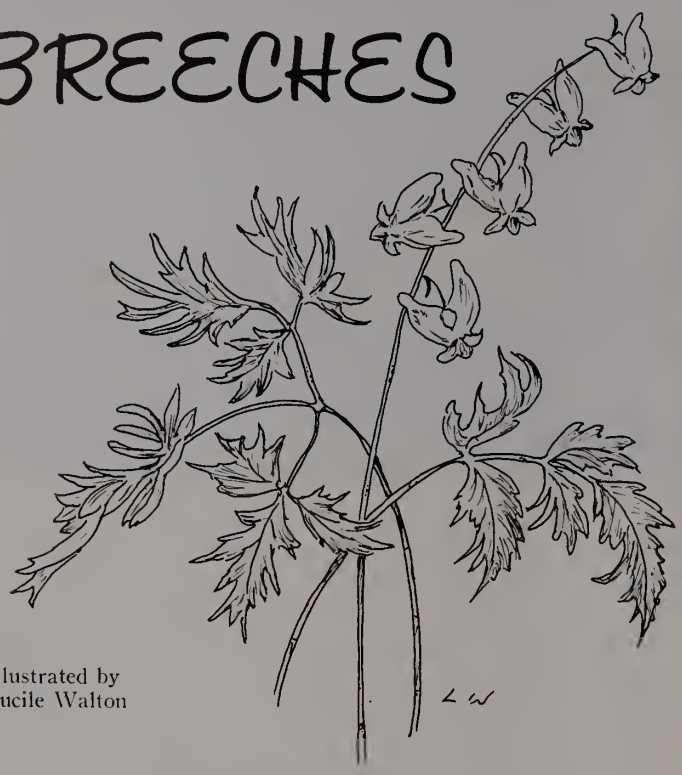
Name _____

Address _____

I should like to apply for one of the scholarships. Please send me the necessary forms.

Signature of Applicant _____

DUTCHMAN'S BREECHES



Illustrated by
Lucile Walton

In Nature's Garden

By ELIZABETH MURRAY
Charlottesville

EVERYONE is familiar with the traditional trousers of the men of the Netherlands, and so, when we meet a flower that is called after them, we ought to know what to expect. The flowers of Dutchman's breeches have a characteristic shape which does indeed resemble a miniature pair of inverted baggy pantaloons such as are still sometimes worn by Dutch men. The two leg-like spurs are, in fact, two of the four, greenish-white petals. The other two are much smaller and narrower, and point downwards with their hollowed tips extended to form an arch over the six protruding yellow stamens. The green style is very slender and tipped with a two-lobed stigma.

The scientific name of the plant is *Dicentra Cucullaria. Dicentra* means 'two-spurred' and applies to the two larger petals and *Cucullaria* comes from the Latin word for 'hood' and refers to the two smaller petals. The flower belongs to the fumitory family, Fumariaceae which includes fumitory, Corydalis, squirrel corn and bleeding heart, and is sometimes merely given sub-family status within the poppy family (Papaveraceae).

Dutchman's breeches is one of the prettiest of our early spring flowers, but it is unfortunately not all that common in this state. It is primarily a flower of the northeastern U.S., extending from Nova Scotia only down to North Carolina so that by the time it gets to Virginia it is nearing the southern limits of its range. However, scattered groups can be found in rich, open woods, and each group may contain a large number of plants which extend over a wide area. It is just a pity for those of us who are admirers of this delicate little plant that the groups themselves are so few and far between. Dutchman's breeches flowers at the end of March, if the spring is fairly well advanced; otherwise, in April and on into May in some places. The flowers are fragile, bloom for a short time, and will not stand being picked and brought into the house.

The flower stalks rise several inches above the clumps of bluish-green, heavily-dissected, compound leaves. The flowers hang down in a line at the tips of these stalks. There may be from one to nine flowers on each stalk. The root consists of a number of small tubers, closely clustered together giving the appearance of a scaly bulb. These are often reddish in color, particularly when they are exposed by a heavy rain or other erosion on the surface of the ground. A related species, *D. canadensis,* is called squirrel corn because its roots are supposed to be very tasty food for squirrels. But beware of trying any species of *Dicentra* for yourselves. They all contain poisonous alkaloids in varying quantities throughout the parts of the plant, and have been known to cause serious disorders in cattle such as trembling, staggering, labored breathing and convulsions.

Dutchman's breeches can be transplanted quite easily since their tubers are so near the surface that they are easy to dig up whole. They will flower well if given a slightly sandy soil and a mixture of sun and shade. The best time for transplanting is probably in the spring, just after the flower has bloomed. Later on in the summer, the leaves turn yellow and wither.

The exotic shape of *Dicentra Cucullaria* has inspired all kinds of common names. The flowers are known variously as soldiers' caps, white hearts, breeches flowers and lyre flowers. In addition to squirrel corn, *D. canadensis,* the other main species in the genus around here, *D. eximia,* is known as turkey corn, staggerweed and bleeding heart. There is another species, *D. spectabilis,* which is known as Chinamen's breeches!

Best known common name for *D. Cucullaria* is Dutchman's breeches. Unlike many other common names, it is hard to confuse with anything else. The only other common name that I know which involves someone from Holland is Dutchman's pipe which is a very different plant, a shrubby vine called *Aristolochia* with flowers shaped like a strongly curved pipe.

Dutchman's breeches is not quite the first wild flower to bring us the good news that winter is over. But it comes out hard on the heels of the really early messengers such as *Hepatica*, bloodroot, and spring-beauty, and may be found blooming with them in the latter part of this month if the spring is a warm, even one. Clumps of this uniquely-shaped flower are easy to recognize.

Trout Stocking Plan
(Continued from page 9)

	Period Stacked		
	Preseasan	May	June-Jan.
LEE CO.			
Hardy's Creek	R	R	R,BR
Dry Creek	B,R	R	R,BR
Mortin's Creek	B,R	B,R	
North Fork Powell River	B,R	B,R	R
MADISON CO.			
Garth Run	B,R	B,R	R,BR
Hughes River	B,R	B,R	B,R,BR
Robinson River	B,R	B,R	
Rose River	B,R	B,R	
MONTGOMERY CO.			
Tom's Creek	B,R	B,R	
S. Fork Raanoke River	B,R,BR	B,R,BR	R,BR
Poverty Creek*	R	R	
Craig Creek*	R	R	
NELSON CO.			
Tye River	B,R,BR	B,R,BR	R,BR
North Fork Tye River	B,R	B,R	R,BR
Stony Creek	B,R	B,R	R
Rackfish River	B,R	B,R	
PAGE CO.			
Hawksbill Creek	B,R	B,R	R,BR
Cub Run*	B,R	B,R	R
Pitt Spring Run*	B,R	B,R	B,R
Upper Passage Creek*	B,R	B,R,BR	
PATRICK CO.			
Dan River (below powerhouse)	B,R	B,R,BR	R,BR
Dan River (above powerhouse)	B,R	B,R	
Rack Castle Creek	B,R	B,R	
Round Meadow Creek	B,R	B,R	
North Fork Mayo Creek	B,R	B,R	
South Fork Mayo Creek	B,R	B,R	
Paorhouse Creek	B,R		
Big Ivy Creek	B,R	B,R	
Arorat River	B,R		
PULASKI CO.			
West Fork Peak Creek	B,R	R	
RAPPAHANNOCK CO.			
Piney Bronch	B,R	B,R	
ROANOKE CO.			
Roanoke River	B,R,BR	B,R,BR	R,BR
Tinker Creek	B,R	B,R	
Glade Creek	B,R,BR	B,R	
ROCKBRIDGE CO.			
Mill Creek	B,R	B,R	
Irish Creek	B,R	B,R	R,BR
South River	B,R	B,R,BR	R,BR
Back Run*	R	R	
Elk Creek*	R	R	
ROCKINGHAM CO.			
North Fork Shenandoah River	B,R,BR	B,R,BR	R,BR
Dry River	B,R	B,R	
Briery Branch	B,R	B,R	
Silver Lake	R		
Boone's Run*	B,R	R	R
Shoemoker River*	B,R		
Blacks Run*	B,R	B,R	B
Gum Run*	B,R	B,R	
Skidmore Fork*	B,R	B,R	
Slate Lick Run*	B,R	R	
Briery Branch*	B,R		
Briery Loke*		BR	
Hone Quorry Run*	B,R	B,R	
Hone Quarry Lake*		BR	
RUSSELL CO.			
Copper Creek	R	R	R
Thompson Creek	B,R	R	
Big Cedar Creek (fish for fun)	R		R
Laurel Bed Lake (fee fishing)	B		

	Period Stacked		
	Preseasan	May	June-Jan.
SCOTT CO.			
Little Stony Creek	B,R	R	R
Big Stony Creek	B,R	R	
Devil's Fork*	R	R	
Stony Creek*	R	R	R
Straight Fork*	R	R	R
Little Stony Creek*	R	R	R
Cove Creek*	R	R	R
SHENANDOAH CO.			
Passage Creek	B,R,BR	B,R,BR	R,BR
Big Stony Creek (lower)	B,R,BR	B,R,BR	R,BR
Big Stony Creek (Bayse)	B,R	B,R	
Cedar Creek	B,R,BR	B,R,BR	R,BR
Mill Creek	B,R	B,R	
Little Stony (above Woodstock Reservoir)*	B,R	B,R,BR	
Little Stony (below Woodstack Reservoir)*	R	R	
Paddy Run*	B,R	R,BR	
Cedar Creek*	B	R,BR	
Mountain Run*	R	R	
Little Passage Creek*	B	R	
Peters Mill Creek*	B,R	B,R	
Tamahawk Pond*	B,R	R,BR	R
Upper Passage Creek*	B,R	B,R,BR	
SMYTH CO.			
Lick Creek (upper)	B,R	R	R,BR
S. Fork Holston River (gorge)	B,R,BR	R,BR	R,BR
S. Fork Halston River (lower)	B,R,BR	B,R,BR	R,BR
Big Lourel Creek	B,R	B,R	R
Staley's Creek	B,R	B,R	R
Middle Fork Holston River	B,R	B,R	R
Comers Creek*	R	R	R
Hurricone Creek*	R	R	R
Houndshell Creek*	R	R	
Dickey's Creek*	R	R	
Little Laurel Creek*		R	
Center Creek*	R		
Roland Creek*	R	R	
TAZEWELL CO.			
Wolf Creek	R,BR	R,BR	R
Cove Creek	B,R	B,R	R,BR
Lourel Creek	B,R	B,R	
Roaring Fork	B,R	B,R	R
Little Tumbling Creek	B,R	B,R	R
Roaring Creek*			R
WARREN CO.			
Gooney Run	B,R	B,R,BR	
WASHINGTON CO.			
Whitetop Laurel	B,R,BR	B,R,BR	R,BR
Tennessee Laurel	B,R	B,R	R
Green Cove Creek	B,R	B,R	R
Big Brumley Creek	B,R	B,R	R
Big Tumbling Creek	B,R	B,R	R
Valley Creek	B,R	B,R	R
Stroight Branch*	R	R	R
WISE CO.			
Middle Fork Powell River	B,R	B,R	
Burns Creek*	R	R	
Cleor Creek*	R	R	
High Knob Lake*	R	R	R
WYTHE CO.			
East Fork Stony Creek	R	R	
Eost Fork Dry Run*	R	R	
West Fork Dry Run*	R	R	
Gullion Fork*	R	R	
West Fork Reed Creek*	R	R	

LAKES STOCKED BY THE VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

Carvins Cove	Rainbow	Flonnagan Reservoir	Rainbow
Philpott Reservoir	Rainbow	South Holston Reservoir	Roinbow

The Dismal

Autumn Olive Study

Commission photo by Kesteloo

Game Management Field Coordinator Kit Shaffer examines autumn olive plant heavy with fruit.

By W. A. GUTHRIE
District Game Biologist

FREQUENTLY, field personnel with the Game Commission are involved in some research projects which aren't really major projects. Since they aren't some of our major projects, we sometimes assume that they aren't important enough to present to the public. Here I think we err, because all sportsmen are interested in any project we undertake which has even a remote effect on wildlife. One such project is an autmun olive study conducted on the Dismal Management Unit.

In 1970 I was informed about a very high analysis fertilizer which might possibly be helpful in establishing seedlings and/or small plants which would be beneficial to wildlife. Even though the cost was high, there was a possibility that the initial and prolonged effect of the fertilizer would be great enough to offset the high cost. Therefore, a small quantity was purchased and the following experiment was set up. The study was known as *A Test of the Effects of Two Types of Fertilizer Upon Terminal Growth of Autumn Olive Plants.*

Rather than use the brand name, we shall refer to the fertilizer as high analysis fertilizer. It is known to last for 3-5 years and has no burning effect even if put right against the stem or if the plant roots are set directly upon the granulated fertilizer. Therefore, it was tested against regular 5-10-10 fertilizer.

The study area was selected and autumn olive plants were set in three different parts of an old wildlife clearing. One hundred plants were set in each of the three plots. Plot number one was the control plot. The autumn olives set here received no fertilizer whatsoever. Plot number two was treated with one cup of 5-10-10 fertilizer per plant each year for two years. Plot number three was treated with high analysis fertilizer when the plants were set, and they received no further treatment.

Ten plants from each plot were randomly selected for measurement and were permanently marked so that the same plants were measured each year. Measurement consisted of averaging the length of the three branches showing the longest annual growth. The following chart shows the field data obtained:

	Control Plot		5-10-10 Fertilizer		High Analysis Fertilizer	
	Length in Inches		Length in Inches		Length in Inches	
Plant	1971	1972	1971	1972	1971	1972
1	0.5	4	6	15	5	18
2	3	2	5	16.5	2.5	13
3	3	10	8	16.5	10	17
4	3	4	5	8	8	9
5	5	3	2.5	17	6	Plant Missing
6	2.5	3	4	14	7	Plant Missing
7	3	13	3	Plant Missing	3	3
8	4	13	5	12	15	22
9	1	6	8	12	5	Plant Missing
10	½	Plant Missing	6	16	7	15

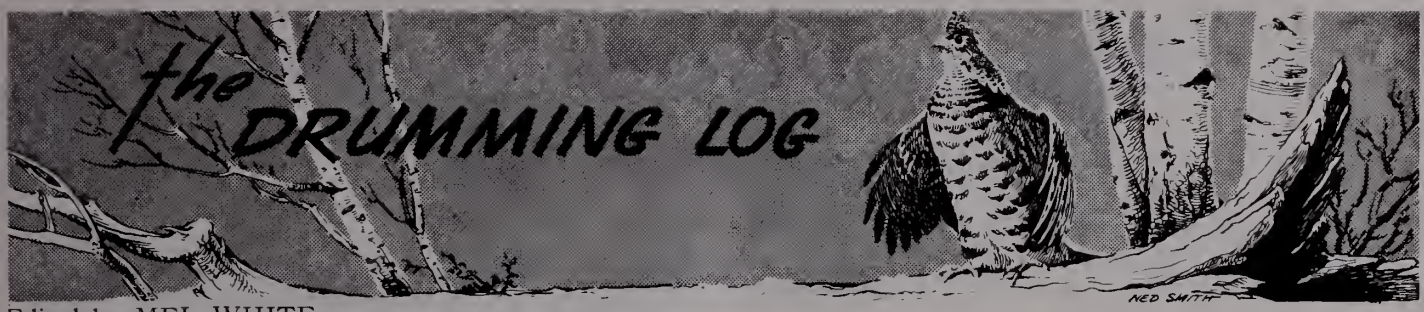
Missing plants in most cases were ones which had been eaten by deer. A third year's measurement had been planned, but the study was terminated because the deer had eaten so many of the plants.

The following results were obtained from the study. The average annual growths for the ten plants were:

	Control	5-10-10	High Analysis
1971	2.55"	5.2"	6.85"
1972	6.44"	14.11"	13.86"

The above information indicated that the extremely high cost of the high analysis fertilizer does not justify its use. In fact, for the two years, the growth of the autumn olives receiving the high analysis fertilizer was barely greater than the growth of those receiving regular 5-10-10 fertilizer. Therefore, it is our conclusion that regular fertilizers are adequate in establishing plants for the benefit of wildlife, and they are more economically sound when spending "wildlife dollars."

True this is not a study of any great magnitude, but I think there is merit in a study of this sort and I believe the sportsman is interested in our results, particularly when it means we are trying to spend the sportsman's dollar so he gets the most benefit from it.



Edited by MEL WHITE

Virginia to Receive $257,500 in Wildlife Funds

Over $33 million in Federal Aid funds for sport fish and wildlife restoration and hunter safety programs were distributed in December by Secretary of the Interior Rogers C. B. Morton, bringing to $70.3 million the amount made available to the states last year by the federal government.

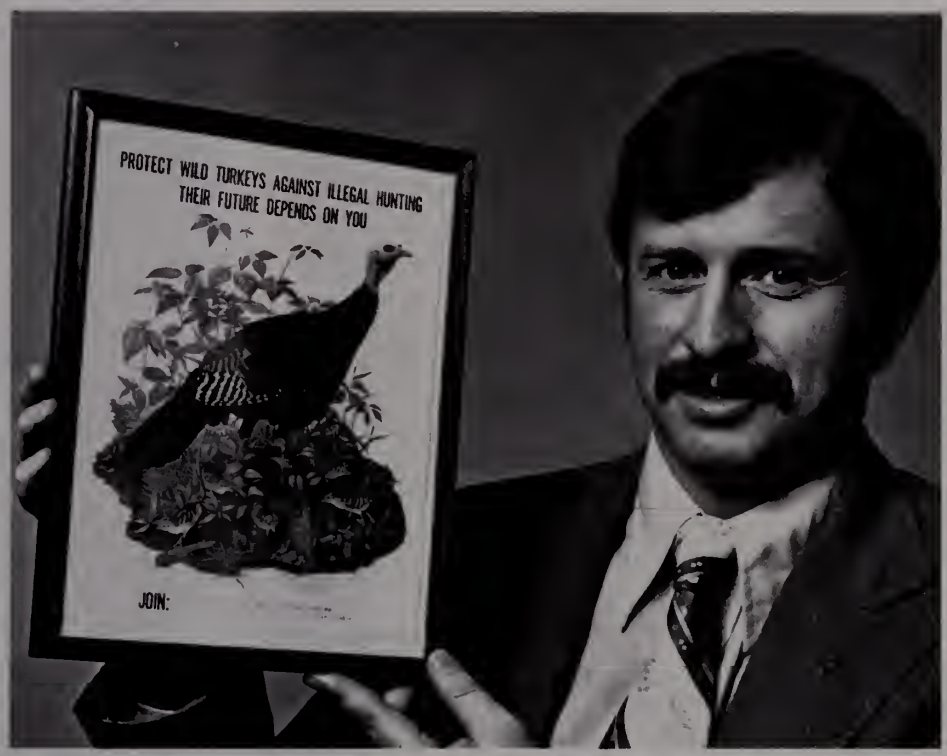
In fiscal year 1974 a total of $62 million was made available to the states.

U.S. Fish and Wildlife Service Director Lynn A. Greenwalt said these funds will be used by the states and governments of Puerto Rico, Guam, the Virgin Islands, and American Samoa to finance fish and wildlife programs. Of the total funds available, $53.5 million is for wildlife restoration and $16.8 million is for fish restoration.

Funds for wildlife restoration and hunter safety programs come from an 11 percent excise tax on pistols and revolvers. Distribution of wildlife restoration funds is based on a formula which takes into account the number of hunting license holders and the area of each state. These funds may be used on approved state wildlife projects such as the acquisition of land suitable for habitat, development and management of habitat and research to aid in managing game species.

Fish restoration funds come from a 10 percent excise tax on fishing rods, reels, creels and artificial baits, lures and flies. Distribution of the funds is made according to a formula based on the number of fishing license holders and the area of each state, including coastal and Great Lakes waters. Activities performed by the states include the purchase of land and water areas, construction and rehabilitation of lakes, development of access sites and facilities for fishermen and research to aid in management of sport fisheries.

Virginia's apportionment for fiscal year 1975 is $257,567.



"Illegal hunting is a major problem facing the wild turkey in America," says Tom Rodgers, Executive Director of the National Wild Turkey Federation. Taking the initiative to draw public attention to this problem, the Federation is distributing a poster (shown here by Rodgers) throughout the country. It's the first major project funded by donations and the Federation's membership, Rodgers said, and it's the first step taken by the young organization toward "waging a campaign against illegal hunting." Posters may be obtained free of charge for display in gun and tackle shops, hunt clubs, check stations, etc., by writing The National Wild Turkey Federation, P.O. Box 467, Edgefield, South Carolina 29824.

A WILDERNESS OF BIRDS, by Sidney Bahrt and Hope S. Jex (Doubleday and Co., Inc., 245 Park Avenue, New York 10017; $24.95).

The photography of Sidney Bahrt is the outstanding feature of this book. There are 77 bird portraits in the volume. It is the first time that Bahrt's bird photography has been published in book form.

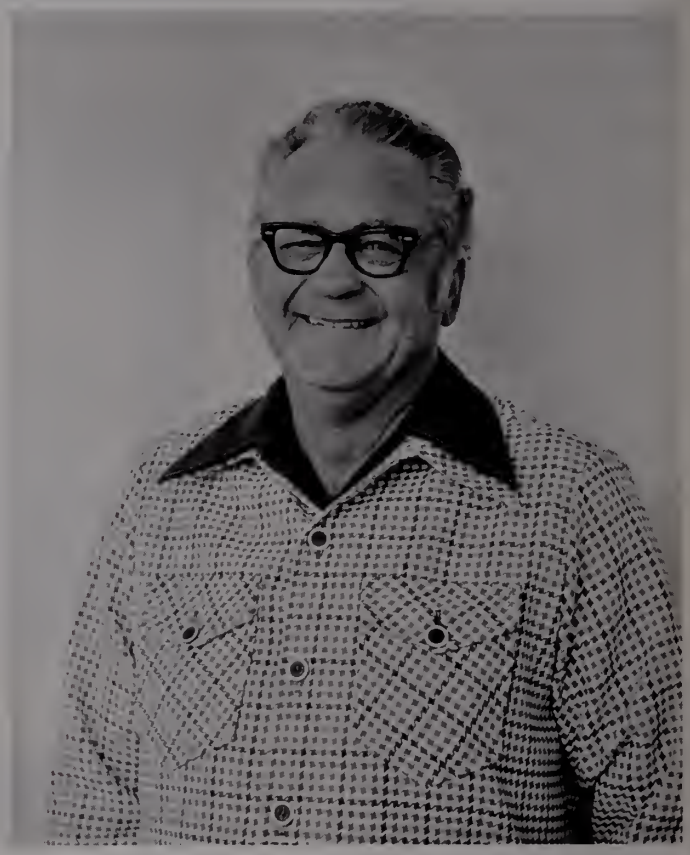
Bahrt's work is somewhat unique in that he uses a hand-held 800 millimeter mirror lens which gives him a very shallow depth of field. The result is critical focus on the bird itself while blurring out other detail in front and behind.

AND THEN THERE WERE NONE, by Nina Leen (Holt, Rinehart and Winston, Inc., 383 Madison Ave., New York 10017; $8.95).

This book contains photography and text on 50 of the United States' 108 endangered species. Leen's photography is very good. The text, provided by Joseph A. Davis, is short though concise. Even in its brevity, the text must be complimented because of its factual and objective nature. That is a quality not often found in writing on endangered species. Emotions generally cloud the message that should be given. Davis did an outstanding job and made the book.

Know Your WILDLIFE TECHNICIANS

Text and Photo by F. N. SATTERLEE
Information Officer



WILLIAM E. LANKFORD
Game Biologist Aide

BILL Lankford grew up in Franklin, Virginia, on the family farm. His earliest memories are of the outdoors, wildlife, and of his father's avid interest in hunting and fishing. He also recalls that he was allowed to go afield with his father while still very young, but only as an observer and for the purpose of learning. Later, when he was older and could satisfy the rigid firearms safety and wildlife "savvy" requirements imposed by his father, he was allowed to go hunting with a gun.

Following graduation from high school in Franklin, Bill worked for a land surveyor and then, in 1941, enlisted in the U.S. Army. For two years he was assigned to Eastern Coastal Defense and then to the 176th Field Artillery Battalion of General George Patton's Third Army in Europe. He participated in five major battles including the now famous Battle of the Bulge, was awarded the Bronze Star for his action in one of the battles, and flew numerous missions as an artillery observer. Bill was discharged in November of 1945 and joined the Virginia National Guard, an organization from which he retired as a major in 1966.

After leaving the service in 1945, Bill was employed by the Virginia Highway Department and in 1950 applied for a position as a warden with the Game Commission. He was accepted and was assigned to Southampton County. Later, he was part of a special group of Conservation Officers who traveled the state as a special law enforcement task force. When the group was disbanded, he was assigned to the Back Bay area to work with Roland Halstead. On November 1, 1966, he was promoted to Area Leader Warden responsible for the activities in Isle of Wight, Sussex and Southampton Counties.

In May of 1969 he was chosen to be a Game Biologist Aide in Game Division District #4. Additionally he is in charge of the game management areas located at Kerr Reservoir, Elm Hill, and Brunswick.

Bill feels that not only does he enjoy working out of doors, with wildlife, nature and people, but that he is in a position which enables him to contribute to the betterment of things wild and our natural and renewable resources. He is married to the former Hazel Spivey of Windsor, Virginia, and they live in Franklin.

Edited by ANN PILCHER

Photos courtesy Boy Scout office

Wildlife Management Area—Scene of Scout Camporee

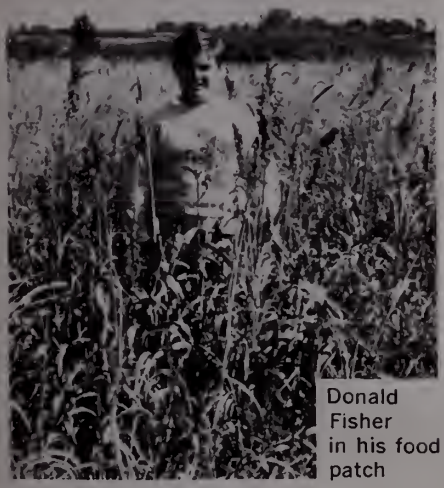
"On location" at Amelia.

2,067 acre Amelia Wildlife Management Area (located approximately 11 miles north of Amelia Courthouse) provided the setting for the Capitol District (city of Richmond) Robert E. Lee Council BSA's Fall Camporee. Five hundred scouts and 49 adult leaders participated in the November 7-9 activities planned around the theme: "Be Prepared for Life; Be Safe and Be Fit." According to O. M. Thompson, Capitol District Chairman, "the weather was just right: complete with full vision of the Milky Way and shooting stars at night (a sight many boys and some adults had never seen).

Backpacking through the Amelia acreage was a weekend highlight. Game Biologist John B. Redd, Jr., of Powhatan, provided the coordination needed to make this a safe and rewarding experience for all involved. First-place honors in the skills competition were earned by Scout Troop 444, which was awarded the Linwood Ford trophy December 15 at Reveille United Methodist Church.

Backpacking.

Westmoreland Food Patch Winner



Donald Fisher in his food patch

With the support of the Virginia Tech Extension Division, the Wildlife Food Patch Contest of Westmoreland County is sponsored by the Washington and Lee Hunt Club, whose members realize the importance of our county wildlife conservation programs. This past year's 4-H winners, receiving cash and one-year *Virginia Wildlife* magazine subscriptions, are *1st,* Donald Fisher, Oak Grove; *2nd,* Rebecca Latane, Washingtons Birthplace; *3rd,* Christopher Wilkins, Montross; *4th,* Betty Sisson, Montross; *5th,* Diane Allen, Colonial Beach.

—JOHN E. SCHABINGER
Extension Agent

Celebrity Mom Checks Trophy Whitetail

Mrs. Earl H. Hamner, Sr., real-life counterpart of Mrs. John Walton of the famous TV show and mother of Game Commission accountant Nancy Jamerson, admires large nine-point whitetail downed by recent Virginia Tech graduate Steve Rhodes of Schuyler.

Edited by JIM KERRICK

National Boating Survey

8.3 million boats in use.
6.6 million boat-owning households.
4.4 million outboard-powered boats.
1.2 million rowboats and/or johnboats.
75% of all boats are propelled by motors; the major portion, under 16 feet in length.
10% (approx.) of all boats are home-built.
7.6 years, the average age of pleasure craft.
63% of all boats are covered by insurance.
16.4 million boat operators, one fourth of them women.
3.5 billion passenger hours logged by the boating public in 1973.
1.5 billion gallons of gasoline consumed.
25% of primary boat operators had taken some safe boating instructions.
8.4 boating emergencies occurred for every 100 boating households in 1973.
0.503 deaths occurred per million passenger hours in 1973.
1.7 deaths occurred per million passenger hours in canoes, the highest per type of craft.
0.08 deaths occurred per million passenger hours in household boats, the lowest per type of craft.
5% of all boats have sanitary head facilities and one third have no treatment. Over ½ discharge directly into the water, treated or untreated.

Fuel and Electrical Standards

The U. S. Coast Guard Standards Division has been working on regulations for fuel and electrical systems for gasoline-powered boats. Outboard boats, outboard engines, portable engines, portable fuel systems, and diesel-powered boats would not be covered by the proposed fuel regulations the Coast Guard plans to publish in the near future. Thus, the proposed regulations would apply to inboard powered boats, including inboard-outboards and jet-drive boats.

Analysis of the statistics on boat fires involving fuel shows that an inboard-powered boat is 33 times more likely to experience an explosion or fire than an outboard-engined boat. This is partly because of the way inboard boats are built, with their engines and fuel systems generally deep in the bilges where fuel vapors can build up. The outboard engines are transom-mounted, and minor fuel leaks can discharge overboard. Further, the fuel tanks used with outboards are usually portable. They must be removed from the boat for refueling and therefore are frequently inspected. It is noteworthy that a very high percentage of fires and explosions on inboard boats occur right after they have been fueled.

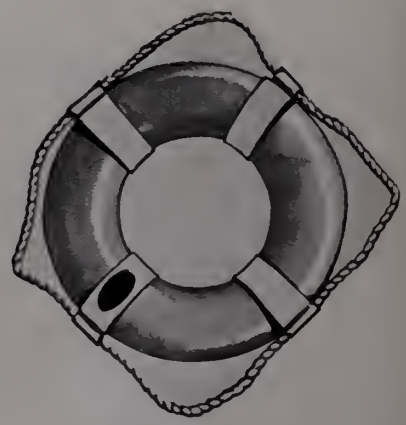
The testing and installation of fuel tanks and fuel line fittings will be the most important parts of the proposed fuel regulations. Fuel tanks would be required to withstand 2½ minutes of exposure to flames from open burning gasoline. The tank would also be required to be built to withstand shock impacts and pressure tests that simulate conditions that occur on boats in service. Fuel pumps, carburetors, flame arresters, fuel fills and vents will each be covered in the proposed fuel regulations.

The proposed electrical system regulations will have the same applicability as the fuel system proposals. That is, they will apply to gasoline-fueled inboard boats and to boats with permanently installed gasoline auxiliary generators. It will be proposed that communication wiring, portable appliances, electronic equipment, outboard engines, and diesel-powered boats be exempt from the requirements of the electrical system regulations.

Most important in the proposed electrical systems regulations is the provision that would require external ignition proofing of all electrical components in the engine room. This would require that parts like starter motors, alternators, pumps, switches, and distributors be built and installed so that arcing from them cannot ignite fuel fumes in the engine room or space.

The ampere capacity of electrical wiring will be proposed to be specified according to the type of insulation that covers the conductors. Every circuit in the boat except the leads that go directly from the battery to the starter motor would be required to be protected by a fuse or circuit breaker. The proposed regulations would require all wiring to be securely installed in a duct or conduit, or be held in place by straps or clamps. The distance between straps and clamps would not be permitted to exceed 18 inches. Open wiring would be required to be protected from chafing or other damage where it passes through bulkheads, consoles, or instrument panels.

The installation of batteries, grounding of dual engines, insulation of wire terminals, and high-voltage ignition wiring will each be covered in the proposed electrical system regulations.



RING BUOY (Type IV). Boats 16 feet and over must have one throwable device on board.

Endangered Species Report

By JOHN W. TAYLOR
Edgewater, Maryland

The Northern Pine Snake

A VIRGINIA herpetologist, passing by a stable in Douthat State Park, saw where someone had killed, skinned and tacked to the wall three pine snakes. "There, in one fell swoop," wrote the scientist, "someone had killed as many pine snakes as I had seen in my life."

Such indiscriminate, senseless destruction is perhaps the principal reason for the scarcity of this species (though habitat destruction and road kills have taken a heavy toll as well.) Not aggressive by nature, the pine snake, once discovered, is liable to show a vigorous defense. Loud hissing is accompanied by the raising of the body and rapid vibrations of the tail. Such intimidating behavior tends to increase the ill will most people instinctively and prejudiciously have for snakes, and few pine snakes are spared by those who happen upon them.

This useless carnage visited upon our native reptiles can be stopped only by a stronger ecological awareness and a greater realization of man's stewardship of his fellow earth inhabitants. Snakes, beautiful and unique creatures, have a place in the grand design. (The pine snake, for example, is an effective agent in the control of rodents.)

In Virginia, this snake is restricted to dry, highland situations, west of the Blue Ridge, and south of Rockingham County. It is found in the pine barrens of New Jersey, and on Maryland's Eastern Shore, but has not been recorded in the Virginia counties of the Delmarva peninsula. The nucleus of the population seems to be the higher terrain of the Carolinas and east Tennessee, with some individuals spilling over into northern Georgia and southern Kentucky.

Within this range it prefers sandy, piney woods and abandoned fields, and finds suitable habitat on the dry wooded ridges of the Appalachians. Three closely related but quite differently colored races are found in the Southeastern states, and the bull snake of the midwest is a close cousin.

A large constrictor, individual pine snakes may reach a length of eight feet or more. Its basic coloration is light gray to white, marked with dark saddle spots of brown to nearly black. These blotches are less distinct on the forepart of the body, but the head itself is strongly marked with dark spots. The head seems disproportionately small, with a somewhat turtle-like appearance.

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